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## FAX TRANSMISSION TO USPTO

TO: Commissioner for Patents  
Attn: Examiner Andrew J. Rudy  
Patent Examining Corps  
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Alexandria, VA 22313-1450

FROM: George H. Gates  
OUR REF.: 9006  
TELEPHONE: (310) 642-4146

Total pages, including cover letter: 44

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Title of Document Transmitted:	TRANSMITTAL SHEETS, RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF, AND SUPPLEMENTAL BRIEF OF APPELLANTS WITH CLAIMS APPENDIX, EVIDENCE APPENDIX, AND RELATED PROCEEDINGS APPENDIX.
Applicant:	George Robert Hood et al.
Serial No.:	09/608,355
Filed:	June 29, 2000
Group Art Unit:	3627
Title:	ADVANCED AND BREAKTHROUGH NET INTEREST REVENUE IMPLEMENTATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM
Our Ref. No.:	9006

Please charge all fees to Deposit Account No. 14-0225 of NCR Corporation, the assignee of the present application.

By: GHG

Name: George H. Gates  
Reg. No.: 33,500

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on the date shown below.

Bubala Senty  
Signature

December 21, 2005  
Date

GHG/bja

G&C 30145.401-US-01

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Due Date: December 28, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: George Robert Hood et al. Examiner: Andrew J. Rudy  
Serial No.: 09/608,355 Group Art Unit: 3627  
Filed: June 29, 2000 Docket: 9006  
Title: ADVANCED AND BREAKTHROUGH NET INTEREST REVENUE IMPLEMENTATION  
FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT  
SYSTEM

## CERTIFICATE OF MAILING OR TRANSMISSION UNDER 37 CFR 1.8

I hereby certify that this correspondence is being filed via facsimile transmission to the U.S. Patent and Trademark Office on December 21, 2005.

By: 

Name: George H. Gates

## MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

We are transmitting herewith the attached:

- ☒ Transmittal sheet, in duplicate, containing a Certificate of Mailing or Transmission under 37 CFR 1.8.
- ☒ Response to Notification of Non-Compliant Appeal Brief.
- ☒ Supplemental Brief of Appellants with Claims Appendix, Evidence Appendix, and Related Proceedings Appendix.

Please consider this a **PETITION FOR EXTENSION OF TIME** for a sufficient number of months to enter these papers, if appropriate.

Please charge all fees to Deposit Account No. 14-0225 of NCR Corporation (the assignee of the present application). A duplicate of this paper is enclosed.

Customer Number 22462GATES & COOPER LLP

Howard Hughes Center  
6701 Center Drive West, Suite 1050  
Los Angeles, CA 90045  
(310) 641-8797

By: 

Name: George H. Gates

Reg. No.: 33,500

GHG/bjs

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Due Date: December 28, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	George Robert Hood et al.	Examiner:	Andrew J. Rudy
Serial No.:	09/608,355	Group Art Unit:	3627
Filed:	June 29, 2000	Docket:	9006
Title:	ADVANCED AND BREAKTHROUGH NET INTEREST REVENUE IMPLEMENTATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM		

**CERTIFICATE OF MAILING OR TRANSMISSION UNDER 37 CFR 1.8**I hereby certify that this correspondence is being filed via facsimile transmission to the U.S. Patent and Trademark Office on December 21, 2005.By: GHG  
Name: George H. Gates**MAIL STOP APPEAL BRIEF - PATENTS**Commissioner for Patents  
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Alexandria, VA 22313-1450

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- ☒ Transmittal sheet, in duplicate, containing a Certificate of Mailing or Transmission under 37 CFR 1.8.
- ☒ Response to Notification of Non-Compliant Appeal Brief.
- ☒ Supplemental Brief of Appellants with Claims Appendix, Evidence Appendix, and Related Proceedings Appendix.

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Please charge all fees to Deposit Account No. 14-0225 of NCR Corporation (the assignee of the present application). A duplicate of this paper is enclosed.

Customer Number 22462GATES & COOPER LLPHoward Hughes Center  
6701 Center Drive West, Suite 1050  
Los Angeles, CA 90045  
(310) 641-8797By: GHG  
Name: George H. Gates  
Reg. No.: 33,500  
GHG/bjs

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DEC 21 2005

Due Date: December 28, 2005

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:	)	
	)	
Inventor: George Robert Hood et al.	)	Examiner: Andrew J. Rudy
	)	
Serial #: 09/608,355	)	Group Art Unit: 3627
	)	
Filed: June 29, 2000	)	Appeal No.: _____
	)	
Title: ADVANCED AND BREAKTHROUGH	)	
NET INTEREST REVENUE	)	
IMPLEMENTATION FOR FINANCIAL	)	
PROCESSING IN A RELATIONAL	)	
<u>DATABASE MANAGEMENT SYSTEM</u>	)	

**RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Appellants' attorney received a Notification of Non-Compliant Appeal Brief dated November 28, 2005, where the Notification states that the Brief of Appellants filed on September 14, 2005 is defective for failure to comply with one or more provisions of 37 C.F.R. §41.37. Specifically, the Notification states that the Brief does not contain an evidence appendix or related proceedings appendix, as required by 37 C.F.R. §§41.37(c)(1)(ix) and (x).

Appellants' attorney submits herewith a supplemental Brief of Appellants to overcome these objections.

No fee is required for filing this supplemental Brief of Appellants. However, the Office is authorized to charge any necessary fees or credit any overpayments to Deposit Account No. 14-0225 of NCR Corporation, the assignee of the present invention.

Respectfully submitted,

George Robert Hood et al.

By their attorneys,

GATES & COOPER LLP

Howard Hughes Center

6701 Center Drive West, Suite 1050

Los Angeles, California 90045

(310) 641-8797

Date: December 21, 2005

By: 

Name: George H. Gates

Reg. No.: 33,500

GHG/

Enclosure

**RECEIVED**  
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Due Date: December 28, 2005

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:	)	
	)	
Inventor: George Robert Hood et al.	)	Examiner: Andrew J. Rudy
	)	
Serial #: 09/608,355	)	Group Art Unit: 3627
	)	
Filed: June 29, 2000	)	Appeal No.: _____
	)	
Title: ADVANCED AND BREAKTHROUGH	)	
NET INTEREST REVENUE	)	
IMPLEMENTATION FOR FINANCIAL	)	
PROCESSING IN A RELATIONAL	)	
<u>DATABASE MANAGEMENT SYSTEM</u>	)	

**SUPPLEMENTAL BRIEF OF APPELLANTS**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR §41.37, Appellants' attorney hereby submits the Brief of Appellants on appeal from the final rejection in the above-identified application as set forth in the Office Action dated December 1, 2004. This Brief of Appellants is a supplemental Brief of Appellants filed in response to the Notification of Non-Compliant Appeal Brief dated November 28, 2005.

No fee is required for filing this supplemental Brief of Appellants. However, the Office is authorized to charge any necessary fees or credit any overpayments to Deposit Account No. 14-0225 of NCR Corporation, the assignee of the present invention.

**I. REAL PARTY IN INTEREST**

The real party in interest is NCR Corporation, the assignee of the present application.

## II. RELATED APPEALS AND INTERFERENCES

There are related appeals in the following co-pending and commonly-assigned patent applications:

Application Serial No. 09/608,681, filed on June 29, 2000, by George R. Hood, entitled OTHER REVENUE IMPLEMENTATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9015 (30145.391US01);

Application Serial No. 09/608,682, filed on June 29, 2000, by George R. Hood, entitled RISK PROVISION IMPLEMENTATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9011 (30145.392US01);

Application Serial No. 09/610,646, filed on June 29, 2000, by George R. Hood et al., entitled BASIC AND INTERMEDIATE NET INTEREST REVENUE IMPLEMENTATIONS FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 8980 (30145.397US01);

Application Serial No. 09/943,060, filed on August 30, 2001, by Paul H. Phibbs, Jr., entitled CAPTIAL ALLOCATION IN A NET INTEREST REVENUE IMPLEMENTATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9391 (30145.404USU1);

Application Serial No. 09/943,059, filed on August 30, 2001, by Paul H. Phibbs, Jr., entitled ALLOCATED BALANCES IN A NET INTEREST REVENUE IMPLEMENTATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9512 (30145.405USU1);

Application Serial No. 10/016,779, filed on December 10, 2001, by Brian J. Wasserman, entitled PARALLEL SELECTION PROCESSING FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9620 (30145.416USU1);

Application Serial No. 10/016,452, filed on December 10, 2001, by Brian J. Wasserman et al., entitled DYNAMIC EVENT SELECTION FOR FINANCIAL PROCESSING IN A

RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9618 (30145.419USU1);

Application Serial No. 09/845,461, filed on April 30, 2001, by George Robert Hood, entitled TAX ADJUSTMENT FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9522 (30145.415US01);

Application Serial No. 09/845,851, filed on April 30, 2001, by George Robert Hood, entitled SHAREHOLDER VALUE ADD FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9511 (30145.421US01); and

Application Serial No. 09/845,924, filed on April 30, 2001, by George R. Hood, entitled AMORTIZATION FOR FINANCIAL PROCESSING IN A RELATIONAL DATABASE MANAGEMENT SYSTEM, attorney's docket number 9435 (30145.422US01).

### III. STATUS OF CLAIMS

Claims 1-13, 30-43 and 60-71 were canceled.

Claims 14-29, 44-59 and 72-87 are pending in the application.

Claims 1-31 were rejected under 35 U.S.C. §103(a) as being unpatentable in view of "College Accounting, Seventh Edition," to Price. This rejection is in error. It is assumed that the listing of claims in the Office Action is a typographical error and that claims 14-29, 44-59 and 72-87 were rejected.

Claims 14-29, 44-59 and 72-87 are being appealed.

### IV. STATUS OF AMENDMENTS

No amendments have been made subsequent to the final Office Action.

### V. SUMMARY OF THE INVENTION

Applicants' independent claims 14, 22, 44, 52, 72 and 80 are generally directed to inventions that perform financial processing in a computer.



Independent claim 14 recites a method of performing financial processing in a computer (100). (See, page 3, lines 1-19; page 7, lines 13-23 referring to 102, 104 and 106 in FIG. 1; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The method includes accessing account, event and organization attributes (202, 204, 206) from a database (106) accessible by the computer (100), wherein: (1) the account attributes (202) comprise data about accounts being measured, (2) the event attributes (204) comprise data about account-related transactions, and (3) the organization attributes (206) comprise data about the organization's financial status. (See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 11, line 4 referring to 202, 204 and 206 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The method also includes performing one or more profitability calculations (200) in the computer (100) using the account, event and organization attributes (202, 204, 206) accessed from the database (106), as well as one or more profit factors (208) and one or more rules (210), wherein the profitability calculations (200) include:

$$\begin{aligned}
 \text{Profit} &= \text{Net Interest Revenue (NIR)} \\
 &+ \text{Other Revenue (OR)} \\
 &- \text{Direct Expense (DE)} \\
 &- \text{Indirect Expense (IE)} \\
 &- \text{Risk Provision (RP)}.
 \end{aligned}$$

(See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 13, line 16 referring to 200, 202, 204, 206, 208 and 210 in FIG. 2; page 13, line 18 through page 14, line 10 referring to 200 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

The Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned}
 \text{NIR} &= \text{Interest Revenue (IR(a))} \\
 &- \text{Cost of Funds (COF(a))} \\
 &+ \text{Value of Funds (VOF(a))} \\
 &- \text{Interest Expense (IE(a))}
 \end{aligned}$$

according to:

$$\text{IR(a)} = \sum \text{AB (c=asset,s,t)(a)} * \text{eff rate(c=asset,s,t)(a)},$$

$$\text{COF}(a) = \Sigma \text{AB}(c=\text{asset}, s, t)(a) * \text{TR}(c=\text{asset}, s, t)(\text{type}_{p,a}(a)),$$

$$\text{IE}(a) = \Sigma \text{AB}(c=\text{liability}, s, t)(a) * \text{eff rate}(c=\text{liability}, s, t)(a), \text{ and}$$

$$\text{VOF}(a) = \Sigma \text{AB}(c=\text{liability}, s, t)(a) * \text{TR}(c=\text{liability}, s, t)(\text{type}_{p,a}(a)),$$

wherein:

$\text{AB}(c, s, t)(a)$  = Average Balances of an account  $a$  based on class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of a balance type,

$\text{eff rate}(c, s, t)(a)$  = Effective interest rate for the account  $a$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$\text{type}_{p,a}(a)$  = Product type  $p$  for the account  $a$ ,

$\text{TR}(c, s, t)(\text{type}_{p,a}(a))$  = Treatment Rate for the accounts  $a$  of a product type  $p$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$\text{IR}(a)$  = the Interest Revenue of the account  $a$ ,

$\text{COF}(a)$  = the Cost of Funds for the account  $a$ ,

$\text{IE}(a)$  = the Interest Expense for the account  $a$ , and

$\text{VOF}(a)$  = the Value of Funds for the account  $a$ .

(See, page 3, lines 1-19; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

Independent claim 22 recites a method of performing financial processing in a computer (100). (See, page 3, lines 1-19; page 7, lines 13-23 referring to 102, 104 and 106 in FIG. 1; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The method includes accessing account, event and organization attributes (202, 204, 206) from a database (106) accessible by the computer (100), wherein: (1) the account attributes (202) comprise data about accounts being measured, (2) the event attributes (204) comprise data about account-related transactions, and (3) the organization attributes (206) comprise data about the organization's financial status. (See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 11, line 4 referring to 202, 204 and 206 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The method also includes performing one or more profitability calculations (200) in the computer (100) using the account, event and organization attributes (202, 204, 206) accessed from the database (106), as well as one or more profit factors (208) and one or more rules (210), wherein the profitability calculations (200) include:

$$\begin{aligned}
 \text{Profit} &= \text{Net Interest Revenue (NIR)} \\
 &+ \text{Other Revenue (OR)} \\
 &- \text{Direct Expense (DE)} \\
 &- \text{Indirect Expense (IE)} \\
 &- \text{Risk Provision (RP)}.
 \end{aligned}$$

(See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 13, line 16 referring to 200, 202, 204, 206, 208 and 210 in FIG. 2; page 13, line 18 through page 14, line 10 referring to 200 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

The Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned}
 \text{NIR} &= \text{Interest Revenue (IR(a))} \\
 &- \text{Cost of Funds (COF(a))} \\
 &+ \text{Value of Funds (VOF(a))} \\
 &- \text{Interest Expense (IE(a))}
 \end{aligned}$$

according to:

$$\begin{aligned}
 \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\
 \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a,b}(a)), \\
 \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\
 \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a,b}(a)),
 \end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a,b}(a)$  = Product type p for the account a based on a behavior b,

$\text{TR(c,s,t)(type}_{p,a,b}(a))$  = Treatment Rate for the accounts a of the product type p and the behavior b based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{IR(a)}$  = the Interest Revenue of the account a,

$\text{COF(a)}$  = the Cost of Funds for the account a,

IE(a) = the Interest Expense for the account a, and

VOF(a) = the Value of Funds for the account a.

(See, page 3, lines 1-19; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

Claim 44 is directed to a system for financial processing, wherein the system includes a computer (100) and logic performed by the computer (100). (See, page 3, lines 1-19; page 7, lines 13-23 referring to 102, 104 and 106 in FIG. 1; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic includes accessing account, event and organization attributes (202, 204, 206) from a database (106) accessible by the computer (100), wherein: (1) the account attributes (202) comprise data about accounts being measured, (2) the event attributes (204) comprise data about account-related transactions, and (3) the organization attributes (206) comprise data about the organization's financial status. (See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 11, line 4 referring to 202, 204 and 206 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic also includes performing one or more profitability calculations (200) in the computer (100) using the account, event and organization attributes (202, 204, 206) accessed from the database (106), as well as one or more profit factors (208) and one or more rules (210), wherein the profitability calculations (200) include:

$$\begin{aligned}\text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)}.\end{aligned}$$

(See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 13, line 16 referring to 200, 202, 204, 206, 208 and 210 in FIG. 2; page 13, line 18 through page 14, line 10 referring to 200 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

The Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned}\text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))}\end{aligned}$$

$$\begin{aligned}
 &+ \quad \text{Value of Funds (VOF(a))} \\
 &- \quad \text{Interest Expense (IE(a))}
 \end{aligned}$$

according to:

$$\text{IR(a)} = \Sigma \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),}$$

$$\text{COF(a)} = \Sigma \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a}\text{(a))},$$

$$\text{IE(a)} = \Sigma \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and}$$

$$\text{VOF(a)} = \Sigma \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a}\text{(a))},$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a}\text{(a)}$  = Product type p for the account a,

$\text{TR(c,s,t)(type}_{p,a}\text{(a))}$  = Treatment Rate for the accounts a of a product type p based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{IR(a)}$  = the Interest Revenue of the account a,

$\text{COF(a)}$  = the Cost of Funds for the account a,

$\text{IE(a)}$  = the Interest Expense for the account a, and

$\text{VOF(a)}$  = the Value of Funds for the account a.

(See, page 3, lines 1-19; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

Claim 52 is directed to a system for financial processing, wherein the system includes a computer (100) and logic performed by the computer (100). (See, page 3, lines 1-19; page 7, lines 13-23 referring to 102, 104 and 106 in FIG. 1; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic includes accessing account, event and organization attributes (202, 204, 206) from a database (106) accessible by the computer (100), wherein: (1) the account attributes (202) comprise data about accounts being measured, (2) the event attributes (204) comprise data about account-related transactions, and (3) the organization attributes (206) comprise data about the organization's financial status. (See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 11, line 4 referring to 202, 204

and 206 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic also includes performing one or more profitability calculations (200) in the computer (100) using the account, event and organization attributes (202, 204, 206) accessed from the database (106), as well as one or more profit factors (208) and one or more rules (210), wherein the profitability calculations (200) include:

$$\begin{aligned}
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 &- \text{Indirect Expense (IE)} \\
 &- \text{Risk Provision (RP)}.
 \end{aligned}$$

(See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 13, line 16 referring to 200, 202, 204, 206, 208 and 210 in FIG. 2; page 13, line 18 through page 14, line 10 referring to 200 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

The Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned}
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 &- \text{Cost of Funds (COF(a))} \\
 &+ \text{Value of Funds (VOF(a))} \\
 &- \text{Interest Expense (IE(a))}
 \end{aligned}$$

according to:

$$\begin{aligned}
 \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\
 \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a,b}\text{(a))}, \\
 \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\
 \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a,b}\text{(a))},
 \end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a,b}(a)$  = Product type  $p$  for the account  $a$  based on a behavior  $b$ ,

$\text{TR}(c,s,t)(\text{type}_{p,a,b}(a))$  = Treatment Rate for the accounts  $a$  of the product type  $p$  and the behavior  $b$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$\text{IR}(a)$  = the Interest Revenue of the account  $a$ ,

$\text{COF}(a)$  = the Cost of Funds for the account  $a$ ,

$\text{IE}(a)$  = the Interest Expense for the account  $a$ , and

$\text{VOF}(a)$  = the Value of Funds for the account  $a$ .

(See, page 3, lines 1-19; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

Claim 72 is directed to an article of manufacture embodying logic for performing financial processing in a computer (100). (See, page 3, lines 1-19; page 7, lines 13-23 referring to 102, 104 and 106 in FIG. 1; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic includes accessing account, event and organization attributes (202, 204, 206) from a database (106) accessible by the computer (100), wherein: (1) the account attributes (202) comprise data about accounts being measured, (2) the event attributes (204) comprise data about account-related transactions, and (3) the organization attributes (206) comprise data about the organization's financial status. (See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 11, line 4 referring to 202, 204 and 206 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic also includes performing one or more profitability calculations (200) in the computer (100) using the account, event and organization attributes (202, 204, 206) accessed from the database (106), as well as one or more profit factors (208) and one or more rules (210), wherein the profitability calculations (200) include:

$$\begin{aligned} \text{Profit} = & \text{Net Interest Revenue (NIR)} \\ & + \text{Other Revenue (OR)} \\ & - \text{Direct Expense (DE)} \\ & - \text{Indirect Expense (IE)} \\ & - \text{Risk Provision (RP)}. \end{aligned}$$

(See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 13, line 16 referring to 200, 202, 204, 206, 208 and 210 in FIG. 2; page 13, line 18 through page 14,

line 10 referring to 200 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

The Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned}\text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))}\end{aligned}$$

according to:

$$\begin{aligned}\text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a}\text{(a))}, \\ \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\ \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a}\text{(a))},\end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a}\text{(a)}$  = Product type p for the account a,

$\text{TR(c,s,t)(type}_{p,a}\text{(a))}$  = Treatment Rate for the accounts a of a product type p based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{IR(a)}$  = the Interest Revenue of the account a,

$\text{COF(a)}$  = the Cost of Funds for the account a,

$\text{IE(a)}$  = the Interest Expense for the account a, and

$\text{VOF(a)}$  = the Value of Funds for the account a.

(See, page 3, lines 1-19; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

Claim 80 is directed to an article of manufacture embodying logic for performing financial processing in a computer (100). (See, page 3, lines 1-19; page 7, lines 13-23 referring to 102, 104 and 106 in FIG. 1; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic includes accessing account, event and organization attributes (202, 204, 206)



from a database (106) accessible by the computer (100), wherein: (1) the account attributes (202) comprise data about accounts being measured, (2) the event attributes (204) comprise data about account-related transactions, and (3) the organization attributes (206) comprise data about the organization's financial status. (See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 11, line 4 referring to 202, 204 and 206 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.) The logic also includes performing one or more profitability calculations (200) in the computer (100) using the account, event and organization attributes (202, 204, 206) accessed from the database (106), as well as one or more profit factors (208) and one or more rules (210), wherein the profitability calculations (200) include:

$$\begin{aligned}
 \text{Profit} &= \text{Net Interest Revenue (NIR)} \\
 &+ \text{Other Revenue (OR)} \\
 &- \text{Direct Expense (DE)} \\
 &- \text{Indirect Expense (IE)} \\
 &- \text{Risk Provision (RP)}.
 \end{aligned}$$

(See, page 3, lines 1-19; page 4, line 17 through page 6, line 3; page 9, line 1 through page 13, line 16 referring to 200, 202, 204, 206, 208 and 210 in FIG. 2; page 13, line 18 through page 14, line 10 referring to 200 in FIG. 2; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

The Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned}
 \text{NIR} &= \text{Interest Revenue (IR(a))} \\
 &- \text{Cost of Funds (COF(a))} \\
 &+ \text{Value of Funds (VOF(a))} \\
 &- \text{Interest Expense (IE(a))}
 \end{aligned}$$

according to:

$$\begin{aligned}
 \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\
 \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a,b}(a)), \\
 \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\
 \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a,b}(a)),
 \end{aligned}$$

wherein:

$AB(c,s,t)(a)$  = Average Balances of an account  $a$  based on class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of a balance type,

$eff\ rate(c,s,t)(a)$  = Effective interest rate for the account  $a$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$type_{p,a,b}(a)$  = Product type  $p$  for the account  $a$  based on a behavior  $b$ ,

$TR(c,s,t)(type_{p,a,b}(a))$  = Treatment Rate for the accounts  $a$  of the product type  $p$  and the behavior  $b$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$IR(a)$  = the Interest Revenue of the account  $a$ ,

$COF(a)$  = the Cost of Funds for the account  $a$ ,

$IE(a)$  = the Interest Expense for the account  $a$ , and

$VOF(a)$  = the Value of Funds for the account  $a$ .

(See, page 3, lines 1-19; and page 31, line 1 through page 33, line 18 referring to 414 in FIG. 4.)

## VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 14-29, 44-59 and 72-87 are obvious under 35 U.S.C. §103(a) in view of "College Accounting, Seventh Edition," to Price.

## VII. ARGUMENTS

### A. The Office Action Rejections

In paragraph (3) of the Office Action, claims 1-31 were rejected under 35 U.S.C. §103(a) as being unpatentable over Price et al., "College Accounting, Seventh Edition," (Price). This rejection is in error. It is assumed that the error is a typographical error and that claims 14-29, 44-59 and 72-87 were rejected.

Appellants' attorney respectfully traverses these rejections.

### B. Appellants' Independent Claims

Applicants' independent claims 14, 22, 44, 52, 72 and 80 are generally directed to inventions that perform financial processing in a computer.

Claim 14 is representative of claims 44 and 72. Claim 14 is directed to a method of performing financial processing in a computer. The method includes accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status. The method also includes performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned}
 \text{Profit} &= \text{Net Interest Revenue (NIR)} \\
 &+ \text{Other Revenue (OR)} \\
 &- \text{Direct Expense (DE)} \\
 &- \text{Indirect Expense (IE)} \\
 &- \text{Risk Provision (RP)}
 \end{aligned}$$

The Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned}
 \text{NIR} &= \text{Interest Revenue (IR(a))} \\
 &- \text{Cost of Funds (COF(a))} \\
 &+ \text{Value of Funds (VOF(a))} \\
 &- \text{Interest Expense (IE(a))}
 \end{aligned}$$

according to:

$$\begin{aligned}
 \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\
 \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a}\text{(a))}, \\
 \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\
 \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a}\text{(a))},
 \end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a}(a)$  = Product type  $p$  for the account  $a$ ,

$\text{TR}(c,s,t)(\text{type}_{p,a}(a))$  = Treatment Rate for the accounts  $a$  of a product type  $p$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$\text{IR}(a)$  = the Interest Revenue of the account  $a$ ,

$\text{COF}(a)$  = the Cost of Funds for the account  $a$ ,

$\text{IE}(a)$  = the Interest Expense for the account  $a$ , and

$\text{VOF}(a)$  = the Value of Funds for the account  $a$ .

Claim 22 is representative of claims 52 and 80. Claim 22 is directed to a method of performing financial processing in a computer. The method includes accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status. The method also includes performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned} \text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)} \end{aligned}$$

The Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IR}(a)) \\ &- \text{Cost of Funds (COF}(a)) \\ &+ \text{Value of Funds (VOF}(a)) \\ &- \text{Interest Expense (IE}(a)) \end{aligned}$$

according to:

$$\begin{aligned} \text{IR}(a) &= \sum \text{AB}(c=\text{asset},s,t)(a) * \text{eff rate}(c=\text{asset},s,t)(a), \\ \text{COF}(a) &= \sum \text{AB}(c=\text{asset},s,t)(a) * \text{TR}(c=\text{asset},s,t)(\text{type}_{p,a,b}(a)), \end{aligned}$$

$IE(a) = \sum AB(c=liability, s, t)(a) * eff\ rate(c=liability, s, t)(a)$ , and

$VOF(a) = \sum AB(c=liability, s, t)(a) * TR(c=liability, s, t)(type_{p,a,b}(a))$ ,

wherein:

$AB(c, s, t)(a)$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$eff\ rate(c, s, t)(a)$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$type_{p,a,b}(a)$  = Product type p for the account a based on a behavior b,

$TR(c, s, t)(type_{p,a,b}(a))$  = Treatment Rate for the accounts a of the product type p and the behavior b based on the class (c), state (s), and tier (t) characteristics of the balance type,

$IR(a)$  = the Interest Revenue of the account a,

$COF(a)$  = the Cost of Funds for the account a,

$IE(a)$  = the Interest Expense for the account a, and

$VOF(a)$  = the Value of Funds for the account a.

#### C. The Price Reference

Price is a college accounting textbook that describes accounting concepts and principles. The portions cited describe analyzing business transactions including the accounting cycle, accounting for assets and liabilities including accounts receivable and uncollectible accounts, and responsibility and cost accounting including departmentalized profit and cost centers.

#### D. Arguments Directed To The First Grounds for Rejection: Whether Claims 14-29, 44-59 and 72-87 Are Obvious Under 35 U.S.C. §103(a) In View of Price.

Appellants' attorney respectfully submits that Appellants' claimed invention is patentable over the Price reference. Specifically, Appellants' attorney asserts that the reference does not teach or suggest the specific combination of elements recited in Appellants' claims.

However, the Office Action asserts the following:

Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price et al. "College Accounting, Seventh Edition" (hereafter "Price")

Price discloses, e.g. pgs 28-41, 529, 531, 966-982 (Fig. 27-5), a method measuring profit based on the factors of net interest revenue, other revenues (Fig. 27-5, line 4, "Operating Revenues"), direct expenses (Fig. 27-5, line 22, "Direct Expenses"), indirect expenses (Fig. 27-5, line 30, "Indirect Expenses"), and risk (Fig. 27-5, line 6, "Less Sales Returns and Allowances"), all set up to take advantage of flexible business rules.

Official Notice is taken that performing financial processing using computer software is common knowledge in the art.

To have provided a method of performing financial processing for an account using software for a computer measuring profit based on the factors of net interest revenue, other revenues, direct expenses, indirect expenses and risk, all set up to take advantage of flexible business rules the business rules to calculate known variations of one of the factors, e.g. net interest revenue, would have been obvious to one of ordinary skill in the art. Doing such would incorporate common knowledge data along with common knowledge software.

Appellants' August 13, 2004 and January 29, 2004 REMARKS have been reviewed, but are not convincing. In short, Appellants' profitability calculations are common knowledge variance for defining total income less total expenses. The account, event and organization attributes, e.g. flexible business rules, claimed have been common knowledge criteria used within the business community for a period of time far exceeding Appellants' filing date. To have incorporated such common knowledge in the profitability calculations for Price, as modified by Official Notice, would have been obvious to one of ordinary skill in the art.

Appellants' attorney disagrees with this analysis.

#### 1. Claims 14, 44 and 72

With regard to independent claims 14, 44 and 72, neither Price nor Official Notice teach or suggest that the Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))} \end{aligned}$$

according to:

$$\begin{aligned} \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a}\text{)(a)),} \\ \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \end{aligned}$$

$$VOF(a) = \Sigma AB(c=liability,s,t)(a) * TR(c=liability,s,t)(type_{p,a}(a)),$$

wherein:

$AB(c,s,t)(a)$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$eff\ rate(c,s,t)(a)$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$type_{p,a}(a)$  = Product type p for the account a,

$TR(c,s,t)(type_{p,a}(a))$  = Treatment Rate for the accounts a of a product type p based on the class (c), state (s), and tier (t) characteristics of the balance type,

$IR(a)$  = the Interest Revenue of the account a,

$COF(a)$  = the Cost of Funds for the account a,

$IE(a)$  = the Interest Expense for the account a, and

$VOF(a)$  = the Value of Funds for the account a.

Note that these limitations in Applicants' claims comprise very specific and detailed equations. None of these very specific and detailed equations are shown by either reference.

Instead, the Office Action only refers generally to "Net Interest Revenue" and makes no specific citation to Price. Further, Official Notice merely states that performing financial processing using computer software is common knowledge in the art. Indeed, nowhere does Price or Official Notice teach or suggest these very specific and detailed equations found in Applicants' claims.

Appellants' claimed invention provides operational advantages over the system disclosed in Price in view of Official Notice. Price reflects an outdated approach to income statements. Appellants' invention, on the other hand, describes a different, more sophisticated model for implementing profitability calculations in a computer system, as well as a different, more sophisticated set of relationships between the elements of the model. Price and Official Notice both fail to teach or suggest the specific model, all of the elements of the model, or the relationships between the various elements.

Thus, Appellants' attorney submits that independent claims 14, 44 and 72 are allowable over Price in view of Official Notice. Further, dependent claims 15-21, 45-51 and 73-79 are

submitted to be allowable over Price in view of Official Notice in the same manner, because they are dependent on independent claims 14, 44 and 72, respectively, and because they contain all the limitations of the independent claims. In addition, dependent claims 15-21, 45-51 and 73-79 recite additional novel elements not shown by Price in view of Official Notice.

2. Claims 15, 45 and 73

Claims 15, 45 and 73 recite that the balance type comprises a combined effect of the class, state, and tier characteristics. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

3. Claims 16, 46 and 74

Claims 16, 46 and 74 recite that the class characteristic is defined as either an asset or liability. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

4. Claims 17, 47 and 75

Claims 17, 47 and 75 recite that the state characteristic is defined as either cleared, ledger, or float. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

5. Claims 18, 48 and 76

Claims 18, 48 and 76 recite that the tier characteristic is defined as tiers used by the organization in supplying balances. The Office Action rejects these claims only generally, i.e.,



on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

6. Claims 19, 49 and 77

Claims 19, 49 and 77 recite identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

7. Claims 20, 50 and 78

Claims 20, 50 and 78 recite allocating asset balances among the accounts using one or more allocation rules. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

8. Claims 21, 51 and 79

Claims 21, 51 and 79 recite that calculating the Net Income Revenue in the Advanced Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

### 9. Claims 22, 52 and 80

With regard to independent claims 22, 52 and 80, neither Price nor Official Notice teach or suggest that the Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned}\text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))}\end{aligned}$$

according to:

$$\begin{aligned}\text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a,b}\text{(a))}, \\ \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\ \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a,b}\text{(a))},\end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a,b}\text{(a)}$  = Product type p for the account a based on a behavior b,

$\text{TR(c,s,t)(type}_{p,a,b}\text{(a))}$  = Treatment Rate for the accounts a of the product type p and the behavior b based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{IR(a)}$  = the Interest Revenue of the account a,

$\text{COF(a)}$  = the Cost of Funds for the account a,

$\text{IE(a)}$  = the Interest Expense for the account a, and

$\text{VOF(a)}$  = the Value of Funds for the account a.

Note that these limitations in Applicants' claims comprise very specific and detailed equations. None of these very specific and detailed equations are shown by either reference.

Instead, the Office Action only refers generally to "Net Interest Revenue" and makes no specific citation to Price. Further, Official Notice merely states that performing financial processing using computer software is common knowledge in the art. Indeed, nowhere does

Price or Official Notice teach or suggest these very specific and detailed equations found in Applicants' claims.

Appellants' claimed invention provides operational advantages over the system disclosed in Price in view of Official Notice. Price reflects an outdated approach to income statements. Appellants' invention, on the other hand, describes a different, more sophisticated model for implementing profitability calculations in a computer system, as well as a different, more sophisticated set of relationships between the elements of the model. Price fails to teach or suggest the specific model, all of the elements of the model, or the relationships between the various elements.

Thus, Appellants' attorney submits that independent claims 22, 52 and 80 are allowable over Price in view of Official Notice. Further, dependent claims 23-29, 53-59 and 81-87 are submitted to be allowable over Price in view of Official Notice in the same manner, because they are dependent on independent claims 22, 52 and 80, respectively, and because they contain all the limitations of the independent claims. In addition, dependent claims 23-29, 53-59 and 81-87 recite additional novel elements not shown by Price in view of Official Notice.

#### 10. Claims 23, 53 and 81

Claims 23, 53 and 81 recite that the balance type comprises a combined effect of a class, state, and tier characteristics. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

#### 11. Claims 24, 54 and 82

Claims 24, 54 and 82 recite that the class characteristic is defined as either an asset or liability. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

12. Claims 25, 55 and 83

Claims 25, 55 and 83 recite that the state characteristic is defined as either cleared, ledger, or float. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

13. Claims 26, 56 and 84

Claims 26, 56 and 84 recite that the tier characteristic is defined as tiers used by the organization in supplying balances. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

14. Claims 27, 57 and 85

Claims 27, 57 and 85 recite identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

15. Claims 28, 58 and 86

Claims 28, 58 and 86 recite allocating asset balances among the accounts using one or more allocation rules. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

16. Claims 29, 59 and 87

Claims 29, 59 and 87 recite calculating the Net Income Revenue in the Breakthrough Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread. The Office Action rejects these claims only generally, i.e., on the same basis as the independent claims, without citing any specific location within the reference as teaching these limitations. Appellants' attorney disagrees with this analysis, and submits that nowhere does the reference teach or suggest the limitations of these claims.

VIII. CONCLUSION

In light of the above arguments, Appellants' attorney respectfully submits that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103. As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.


Respectfully submitted,

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## CLAIMS APPENDIX

1-13. (CANCELED)

14. A method of performing financial processing in a computer, comprising:

(a) accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status;

(b) performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned} \text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)} \end{aligned}$$

(c) wherein the Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))} \end{aligned}$$

according to:

$$\begin{aligned} \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a}\text{(a))}, \\ \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\ \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a}\text{(a))}, \end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate}(c,s,t)(a)$  = Effective interest rate for the account  $a$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$\text{type}_{p,a}(a)$  = Product type  $p$  for the account  $a$ ,

$\text{TR}(c,s,t)(\text{type}_{p,a}(a))$  = Treatment Rate for the accounts  $a$  of a product type  $p$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$\text{IR}(a)$  = the Interest Revenue of the account  $a$ ,

$\text{COF}(a)$  = the Cost of Funds for the account  $a$ ,

$\text{IE}(a)$  = the Interest Expense for the account  $a$ , and

$\text{VOF}(a)$  = the Value of Funds for the account  $a$ .

15. The method of claim 14, wherein the balance type comprises a combined effect of the class, state, and tier characteristics.

16. The method of claim 15, wherein the class characteristic is defined as either an asset or liability.

17. The method of claim 15, wherein the state characteristic is defined as either cleared, ledger, or float.

18. The method of claim 15, wherein the tier characteristic is defined as tiers used by the organization in supplying balances.

19. The method of claim 14, further comprising identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type.

20. The method of claim 14, further comprising allocating asset balances among the accounts using one or more allocation rules.

21. The method of claim 14, wherein the step of calculating the Net Income Revenue in the Advanced Tier generates one or more outputs selected from a group comprising the

Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread.

22. A method of performing financial processing in a computer, comprising:

(a) accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status;

(b) performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned} \text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)} \end{aligned}$$

(c) wherein the Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))} \end{aligned}$$

according to:

$$\begin{aligned} \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a,b}\text{(a))}, \\ \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\ \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,u,b}\text{(a))}, \end{aligned}$$

wherein:

$\text{AB(c,s,t)(a)}$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate(c,s,t)(a)}$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,



$\text{type}_{p,a,b}(a)$  = Product type  $p$  for the account  $a$  based on a behavior  $b$ ,  
 $\text{TR}(c,s,t)(\text{type}_{p,a,b}(a))$  = Treatment Rate for the accounts  $a$  of the product type  $p$  and the behavior  $b$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,  
 $\text{IR}(a)$  = the Interest Revenue of the account  $a$ ,  
 $\text{COF}(a)$  = the Cost of Funds for the account  $a$ ,  
 $\text{IE}(a)$  = the Interest Expense for the account  $a$ , and  
 $\text{VOF}(a)$  = the Value of Funds for the account  $a$ .

23. The method of claim 22, wherein the balance type comprises a combined effect of a class, state, and tier characteristics.

24. The method of claim 23, wherein the class characteristic is defined as either an asset or liability.

25. The method of claim 23, wherein the state characteristic is defined as either cleared, ledger, or float.

26. The method of claim 23, wherein the tier characteristic is defined as tiers used by the organization in supplying balances.

27. The method of claim 22, further comprising identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type.

28. The method of claim 22, further comprising allocating asset balances among the accounts using one or more allocation rules.

29. The method of claim 22, wherein the step of calculating the Net Income Revenue in the Breakthrough Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread.

30-43. (CANCELED)

44. A system for financial processing, comprising:

a computer;

logic, performed by the computer, for:

(a) accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status;

(b) performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned} \text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)} \end{aligned}$$

(c) wherein the Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))} \end{aligned}$$

according to:

$$\begin{aligned} \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a}\text{)(a)),} \\ \text{IE(a)} &= \sum \text{AB (c=liability,s,t)(a) * eff rate(c=liability,s,t)(a), and} \\ \text{VOF(a)} &= \sum \text{AB (c=liability,s,t)(a) * TR(c=liability,s,t) (type}_{p,a}\text{)(a)),} \end{aligned}$$

wherein:

$AB(c,s,t)(a)$  = Average Balances of an account  $a$  based on class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of a balance type,

$eff\ rate(c,s,t)(a)$  = Effective interest rate for the account  $a$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$type_{p,a}(a)$  = Product type  $p$  for the account  $a$ ,

$TR(c,s,t)(type_{p,a}(a))$  = Treatment Rate for the accounts  $a$  of a product type  $p$  based on the class ( $c$ ), state ( $s$ ), and tier ( $t$ ) characteristics of the balance type,

$IR(a)$  = the Interest Revenue of the account  $a$ ,

$COF(a)$  = the Cost of Funds for the account  $a$ ,

$IE(a)$  = the Interest Expense for the account  $a$ , and

$VOF(a)$  = the Value of Funds for the account  $a$ .

45. The system of claim 44, wherein the balance type comprises a combined effect of the class, state, and tier characteristics.

46. The system of claim 45, wherein the class characteristic is defined as either an asset or liability.

47. The system of claim 45, wherein the state characteristic is defined as either cleared, ledger, or float.

48. The system of claim 45, wherein the tier characteristic is defined as tiers used by the organization in supplying balances.

49. The system of claim 44, further comprising logic for identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type.

50. The system of claim 44, further comprising logic for allocating asset balances among the accounts using one or more allocation rules.

51. The system of claim 44, wherein the logic for calculating the Net Income Revenue in the Advanced Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread.

52. A system for financial processing, comprising:  
a computer;  
logic, performed by the computer, for:

(a) accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status;

(b) performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned} \text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)} \end{aligned}$$

(c) wherein the Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IR(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))} \end{aligned}$$

according to:

$$\begin{aligned} \text{IR(a)} &= \sum \text{AB} (\text{c=asset, s, t})(\text{a}) * \text{eff rate}(\text{c=asset, s, t})(\text{a}), \\ \text{COF(a)} &= \sum \text{AB} (\text{c=asset, s, t})(\text{a}) * \text{TR}(\text{c=asset, s, t}) (\text{type}_{\text{p,a,b}}(\text{a})), \\ \text{IE(a)} &= \sum \text{AB} (\text{c=liability, s, t})(\text{a}) * \text{eff rate}(\text{c=liability, s, t})(\text{a}), \text{ and} \end{aligned}$$

$$VOF(a) = \Sigma AB(c=liability,s,t)(a) * TR(c=liability,s,t)(type_{p,a,b}(a)),$$

wherein:

$AB(c,s,t)(a)$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$eff\ rate(c,s,t)(a)$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$type_{p,a,b}(a)$  = Product type p for the account a based on a behavior b,

$TR(c,s,t)(type_{p,a,b}(a))$  = Treatment Rate for the accounts a of the product type p and the behavior b based on the class (c), state (s), and tier (t) characteristics of the balance type,

$IR(a)$  = the Interest Revenue of the account a,

$COF(a)$  = the Cost of Funds for the account a,

$IE(a)$  = the Interest Expense for the account a, and

$VOF(a)$  = the Value of Funds for the account a.

53. The system of claim 52, wherein the balance type comprises a combined effect of a class, state, and tier characteristics.

54. The system of claim 53, wherein the class characteristic is defined as either an asset or liability.

55. The system of claim 53, wherein the state characteristic is defined as either cleared, ledger, or float.

56. The system of claim 53, wherein the tier characteristic is defined as tiers used by the organization in supplying balances.

57. The system of claim 52, further comprising logic for identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type.

58. The system of claim 52, further comprising logic for allocating asset balances among the accounts using one or more allocation rules.

59. The system of claim 52, wherein the logic for calculating the Net Income Revenue in the Breakthrough Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread.

60-71. (CANCELED)

72. An article of manufacture embodying logic for performing financial processing in a computer, comprising:

(a) accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status;

(b) performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

Profit = Net Interest Revenue (NIR)  
 + Other Revenue (OR)  
 - Direct Expense (DE)  
 - Indirect Expense (IE)  
 - Risk Provision (RP)

(c) wherein the Net Interest Revenue (NIR) is calculated in an Advanced Tier as:

NIR = Interest Revenue (IE(a))  
 - Cost of Funds (COF(a))  
 + Value of Funds (VOF(a))  
 - Interest Expense (IE(a))

according to:

$$IR(a) = \sum AB(c=asset,s,t)(a) * eff\ rate(c=asset,s,t)(a),$$

$$\text{COF}(a) = \Sigma \text{AB} (c=\text{asset}, s, t)(a) * \text{TR}(c=\text{asset}, s, t) (\text{type}_{p,a}(a)),$$

$$\text{IE}(a) = \Sigma \text{AB} (c=\text{liability}, s, t)(a) * \text{eff rate}(c=\text{liability}, s, t)(a), \text{ and}$$

$$\text{VOF}(a) = \Sigma \text{AB} (c=\text{liability}, s, t)(a) * \text{TR}(c=\text{liability}, s, t) (\text{type}_{p,a}(a)),$$

wherein:

$\text{AB}(c, s, t)(a)$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$\text{eff rate}(c, s, t)(a)$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{type}_{p,a}(a)$  = Product type p for the account a,

$\text{TR}(c, s, t)(\text{type}_{p,a}(a))$  = Treatment Rate for the accounts a of a product type p based on the class (c), state (s), and tier (t) characteristics of the balance type,

$\text{IR}(a)$  = the Interest Revenue of the account a,

$\text{COF}(a)$  = the Cost of Funds for the account a,

$\text{IE}(a)$  = the Interest Expense for the account a, and

$\text{VOF}(a)$  = the Value of Funds for the account a.

73. The article of claim 72, wherein the balance type comprises a combined effect of the class, state, and tier characteristics.

74. The article of claim 73, wherein the class characteristic is defined as either an asset or liability.

75. The article of claim 73, wherein the state characteristic is defined as either cleared, ledger, or float.

76. The article of claim 73, wherein the tier characteristic is defined as tiers used by the organization in supplying balances.

77. The article of claim 72, further comprising identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type.

78. The article of claim 72, further comprising allocating asset balances among the accounts using one or more allocation rules.

79. The article of claim 72, wherein the step of calculating the Net Income Revenue in the Advanced Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread.

80. An article of manufacture embodying logic for performing financial processing in a computer, comprising:

(a) accessing account, event and organization attributes from a database accessible by the computer, wherein: (1) the account attributes comprise data about accounts being measured, (2) the event attributes comprise data about account-related transactions, and (3) the organization attributes comprise data about the organization's financial status;

(b) performing one or more profitability calculations in the computer using the account, event and organization attributes accessed from the database, as well as one or more profit factors and one or more rules, wherein the profitability calculations include:

$$\begin{aligned} \text{Profit} &= \text{Net Interest Revenue (NIR)} \\ &+ \text{Other Revenue (OR)} \\ &- \text{Direct Expense (DE)} \\ &- \text{Indirect Expense (IE)} \\ &- \text{Risk Provision (RP)} \end{aligned}$$

(c) wherein the Net Interest Revenue (NIR) is calculated in a Breakthrough Tier as:

$$\begin{aligned} \text{NIR} &= \text{Interest Revenue (IE(a))} \\ &- \text{Cost of Funds (COF(a))} \\ &+ \text{Value of Funds (VOF(a))} \\ &- \text{Interest Expense (IE(a))} \end{aligned}$$

according to:

$$\begin{aligned} \text{IR(a)} &= \sum \text{AB (c=asset,s,t)(a) * eff rate(c=asset,s,t)(a),} \\ \text{COF(a)} &= \sum \text{AB (c=asset,s,t)(a) * TR(c=asset,s,t) (type}_{p,a,b}(a)), \end{aligned}$$



$IE(a) = \Sigma AB(c=liability, s, t)(a) * eff\ rate(c=liability, s, t)(a)$ , and

$VOF(a) = \Sigma AB(c=liability, s, t)(a) * TR(c=liability, s, t)(type_{p,a,b}(a))$ ,

wherein:

$AB(c, s, t)(a)$  = Average Balances of an account a based on class (c), state (s), and tier (t) characteristics of a balance type,

$eff\ rate(c, s, t)(a)$  = Effective interest rate for the account a based on the class (c), state (s), and tier (t) characteristics of the balance type,

$type_{p,a,b}(a)$  = Product type p for the account a based on a behavior b,

$TR(c, s, t)(type_{p,a,b}(a))$  = Treatment Rate for the accounts a of the product type p and the behavior b based on the class (c), state (s), and tier (t) characteristics of the balance type,

$IR(a)$  = the Interest Revenue of the account a,

$COF(a)$  = the Cost of Funds for the account a,

$IE(a)$  = the Interest Expense for the account a, and

$VOF(a)$  = the Value of Funds for the account a.

81. The article of claim 80, wherein the balance type comprises a combined effect of a class, state, and tier characteristics.

82. The article of claim 81, wherein the class characteristic is defined as either an asset or liability.

83. The article of claim 81, wherein the state characteristic is defined as either cleared, ledger, or float.

84. The article of claim 81, wherein the tier characteristic is defined as tiers used by the organization in supplying balances.

85. The article of claim 80, further comprising identifying the Treatment Rate using features, wherein the features are selected from a group comprising open date, reset date, term, payment characteristics, and rate type.

86. The article of claim 80, further comprising allocating asset balances among the accounts using one or more allocation rules.

87. The article of claim 80, wherein the step of calculating the Net Income Revenue in the Breakthrough Tier generates one or more outputs selected from a group comprising the Interest Revenue, Interest Expense, Cost of Funds, Value of Funds, Lending Spread, and Deposit Spread.

## EVIDENCE APPENDIX

None.

## RELATED PROCEEDINGS APPENDIX

None.